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Prof. Creighton discussed the concept of the "Transcendental Ego," and was followed by Mr. F. C. S. Schiller, who examined the nature of "Pessimism," and Prof. James Seth, who discussed the "Standpoint and Method of Ethics." Two papers devoted to logic were given in outline merely. Prof. J. G. Hibben exhibited and explained a set of diagrams by means of which the various forms of immediate inference were generalized and schematized. Prof. A. T. Ormond summed up his position with regard to the negative in logic.

The session closed with a report by Prof. Sanford on a new eye sphygmograph, which furnishes the best available method (apart from vivisection) of measuring the blood supply of the brain. After describing the apparatus, he exhibited diagrams of records obtained by means of it before and after nervous excitation; these were compared with simultaneous records of the wrist pulse.

The afternoon session was devoted to the Address of the out-going President, Prof. Fullerton. The subject of the address was "The 'Knower' in Psychology." Opening with an historical review of the position taken by various thinkers regarding the agent or subject of knowledge, he proceeded to criticise in detail the theories held by Prof. Ladd and other members of the Association. After the address Prof. Ladd replied to the criticism of his own views.

At the business meeting of the Association, Prof. J. Mark Baldwin, of Princeton, was elected President for the ensuing year, and Dr. Livingston Farrand, of Columbia, was re-elected Secretary and Treasurer. Several new members were elected into the Association, and the two annual vacancies in the Council were filled. The committee appointed at the previous meeting (1895) to formulate a system of uniform physical and mental tests, submitted their report, which was not read in full owing to the lateness of the hour. The committee were unable to agree on a complete system of uniform tests; they recommended that for the present considerable latitude be given within certain broad lines, with a view to comparing various tests, so that the best may eventually be adopted.—H. C. W.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The American Society of Naturalists met December 29th, at the Harvard Medical School, Boston. The meeting of the affiliated Societies, was fully up to the standard of previous gatherings, both as to the amount of work accomplished and the attendance. The programs of the societies were full, the physiologists especially showing an important increase in the number of workers. Several young men presented maiden papers of merit to the morphologists; while the merits of the opposed theories of psychic parallelism and interference in animal evolution were discussed by the psychologists among the topics before them. The discussion of the inheritance of acquired characters was made the subject of the special discussion by the naturalists, and, although the subject is not new, a large audience was present, the other societies, excepting the physiologists, adjourning to attend it. Profs. Minot and James, of Harvard University, took the negative, and Macfarlane and Cope, of Pennsylvania, the affirmative. It was generally regretted that more time had not been alloted to the discussion, so as to have enabled others to take part in it. The evening dinner was closed by an interesting address from the President, Prof. Scott, of Princeton, an innovation which we hope will become the regular custom.

The following is the program of proceedings: Reports of Committees; Election of New Members; Appointment of Special Committees; Discussion, subject: "The Inheritance of Acquired Characteristics;" "Zoology," Prof. C. S. Minot; "Botany," Prof. J. M. Macfarlane; "Paleontology," Prof. E. D. Cope; "Psychology," Prof. Wm. James; Special Papers.

Prof. C. S. Minot opened the discussion on heredity, suggesting the wide interest in the solution of the problem of whether characters acquired during the life of the parent were transmitted to the offspring. It was well illustrated in the popular beliefs that correct habits of life or the opposite, in parents, had an important influence on the character of children, leaving out of the question the force of example. To many the incentive to right living was centered largely on the bearings of the matter on education of the young.

The scientific data, however, on which to base a theory, was most meagre in amount and unsatisfactory in character. Much of the reasoning had to be in assumptions, which were but sparsely indicated in the evidence. The characters generally of an individual were largely the result of many generations of development, and were the last term of a series, each part of which had a causal relation to the result.

Several specific characters were taken up by the speaker, as the development of the facial nerve in the embryo, cases of false articulation forming in luxated joints, characters in the Papilio genus of butterflies, and some other instances. It was urged as an observation that all normal parts, whether hard or colored or otherwise highly differentiated from the germ, seem to follow a predetermined plan in the development of the individual, and, in the history of a species, and have a tendency to differentiate in series. The presence of series it was therefore, argued is no evidence of the transmission of acquired characters.

An elaborate presentation of the two theories of the primal unit of life was entered into, detailing first the views of investigators who regarded the start as a small, discrete, homogenous particle gifted with considerable locomotive power, and thus capable of conveying impressions from the outside of the subject to the more remote precincts of the germ within. Opposed to these were theories to which the speaker adhered, which assumed the unit to be the cell, relatively large, of a various chemical constituency and with something of an organization. The first of these two theories permitted the further step of assumption that acquired impressions could, by the greater facility in movement, reach the germ, while the second theory found the germ rather removed from outside impressions, and tending generally to perpetuating the type or the result of accretions from a long previous series of experiences and impressions. Prof. Minot was thus opposed to the idea of transmission as defined in the question.

Prof. J. M. McFarlane was in favor of the theory of transmission, drawing his data from botanical studies in an exhaustive review of the vegetable kingdom. His arguments were directed mainly to examples of changes in genera and species from changes in environment, and a lot of evidence was adduced having some relation to the transmission of acquired characters, but mainly to showing the prompt response in nature to the influence of surroundings.

Prof. Cope's defence of the doctrine of the inheritance of acquired characters was selected from the evidence contained in his book, "The Primary Factors of Organic Evolution." He referred especially to the history of the moulding of the articulations of the vertebrate, and especially the Mammalian skeletons, of which such complete series has been furnished by paleontology. The forms of these articulations he believed to be the result of their movements, for the reason that they could be formed artificially as the result of experiment, or in consequence of luxations. He believed that the resulting forms have been inherited, because they are found in the embryo, before the animal has had an opportunity of developing the structure for himself by interaction with the environment.

He admitted the justice of Dr. Minot's demand for an explanation of this phenomenon. He stated that the preformationists offered no explanation ; and, indeed, so far as he could see, none is possible from their point of view. The epigenesisists could, on the contrary, appeal to the phenomena of memory as a plausible explanation. Stimuli from without and within the organism leave a record in the brain-cells, which give the form to consciousness when the latter invades them along the guiding lines of association. Why should not the germ plasma be capable of a similar record of stimuli, which is expressed in the recapitulatory growth of the embryo? He thought that the evidence pointed to such a process. These stimuli affected the soma and the germ plasma simultaneously, in accordance with the doctrine of Diplogenesis; but that the soma only records results in each tissue which are appropriate to the functions of the same, while the germ plasma and brain-cells may record them all. The certainty of record in both cases he supposed to depend on the frequency and strength of the impression, as is known to be the case with the memory of the mental organism. Hence mutilations or single impressions were rarely recorded, while those due to the constant and habitual movements are recorded, and furnish the physical basis of growth and of evolution of type.

He further remarked that the belief that natural selection originates structure could not be entertained, as paleontological evidence shows that evolution has proceeded by very gradual additions and subtractions of character, which required long periods to become of any value in the struggle for existence—sometimes an entire geological period being occupied in the elaboration of a character to structural usefulness.

Finally, he referred to the physical mechanism of mental phenomena, and stated that some psychologists require a completed machine in order for the performance of special mental function. The speaker called attention to the fact that it is highly probable that the fundamental sensations do not even require a nervous system for their expression. Thus Protozoa appear to experience the sensations of hunger, temperature and the muscular sense of resistance. Hence, it is as true of the physical basis of mental as of other functions that the formation produces the structure, while structure merely specializes or perfects function.

Professor Wm. James followed from the psychologic point of view. He said that the brain was evidently an organ capable of great variability of function, and that variations in new directions were frequent. He regarded genius as a form of sporting, and that such sports frequently served as guides to the development of human society. He believed that education was of primary importance, and did not find much evidence of the inheritance of characters acquired in this way. He believed on the contrary that mental acquisitions are transmitted from generation to generation by education and by imitation, a process which Prof. J. Mark Baldwin had termed "Social Heredity."

At 8.15 P. M. the Society attended at the Fogg Museum of Art, Harvard University, Cambridge, a lecture by Mr. Alexander Agassiz, on "The History of Deep Sea Explorations;" and at 9.30 P. M. attended a reception by Mr. Alexander Agassiz, at his residence on Quincy Street, Cambridge.

On Wednesday, December 30th, 12 M., the Society attended at the Fogg Museum of Art, Harvard University, Cambridge, a lecture by Prof. E. B. Wilson, on "Recent Developments of the Cell Theory; at 1.30 P. M. was served at the Faculty Rooms, University Hall, Cambridge, a luncheon, by invitation of the President and Fellows of Harvard College. Two addresses were delivered in honor of the Fiftieth Anniversary of the arrival of Agassiz in Cambridge, by President Elliott and Prof. Wm. James. At 3 P. M., Mr. Alexander Agassiz met the Society in the Museum of Comparative Zoology, and described the Museum; and at 6.30 P. M., Hotel Brunswick, corner of Boylston and Clarendon Streets, Boston, a business session was held. At 7 P. M. the annual dinner of the Affiliated Societies took place at the Hotel Brunswick, at the close of which the societies listened to the address of the President, Prof. W. B. Scott.

American Physiological Society.—Program: Tuesday, December 29th, at the Harvard Medical School, General Business; Reading of Papers: W. T. Porter, "Studies in the Physiology of the Mammalian Heart:" T. Hough, "On the Duration of Cardiac Standstill with Different Strengths of Vagus Stimulation;" R. Hunt, "Some Experiments on the Relation of the Inhibitory to the Accelerator Nerves of the Heart;" W. H. Howell, "Exhibition of Plethysmographic Curves Obtained During Sleep, with Remarks;" H. P. Bowditch, "The Relation between Height, Weight and Age in Growing Children;" C. S. Minot, "An Experiment on Telegony;" S. J. Meltzer, "On the Contraction of the Stomach Produced by Direct Stimulation and by Stimulation of the Vagi with the Faradic Current;" Fr. Pfaff, "An Experimental Investigation of Some of the Conditions Influencing the Secretion and Composition of Bile" (With Mr. A. Balch); G. Lusk, "The Production of Sugar from Gelatine in Metabolism;" W. T. Porter, "Demonstration of a Method for the Isolation of the Mammalian Heart;" S. J. Meltzer, "Demonstration of the Reaction of the Stomach to Faradic Stimulation;" G. T. Kemp, "Demonstration of a Convenient Form of Apparatus to Avoid Explosions in Gas Analysis."

Wednesday, December 20th, at Harvard University, Cambridge, General Business; Reading of Papers: G. C. Huber, " The Structure of the Sympathetic Ganglia of Vertebrates, with Demonstration of Preparations;" G. C. Huber, " Remarks on the Ending of Nerves in Muscle Tissue, with Demonstrations;" W. Mills, " The Functional Development of the Cerebral Cortex in Different Groups of Animals;" R. H. Cunningham, " The Restoration of Coordinate Power After Nerve Crossing;" R. H. Chittenden, " The Proteolytic Action of Papain;" C. F. Hodge," Experiments on the Physiological Influence of Alcohol;" G. T. Kemp, " The Physiological Action of Nitrous Oxide;" S. J. Meltzer, " On Bactericidal Effects of Lymph from the Thoracic Duct" (with Dr. Charles Norris). G. W. Fitz, Demonstration of Apparatus: 1, A spring cylinder chronograph for spark records; 2, A lever system to illustrate the action of muscles in relation to joints; 3, A form of student's myograph; 4, A modification of the location reaction apparatus. C. F. Hodge (for C. C. Stewart), Demonstration of preparations of the nerve cell under acute alcoholic poisoning. General Business.

The American Morphological Society.—Boston, December 29, 1896.—The following papers were read: Arnold Graf, " On the Individuality of the Cell." Maintained the individuality of the cell pointing out the existence of organs in it. A. D. Mead, " On the Centrosomes of Chætopterus." Pointed out the existence of primary and secondary centrosomes in the unfertilized egg, the latter arising from the reticulum of the cytoplasm. These form the centers of spindles, and these spindles divide. History of the egg centrosome during maturation traced, and at the close of the formation of the second polar globule it occupied a position in center of chromosomes. Author was not certain of the origin of the male centrosome. F. R. Lillie, " Origin of the Center of the First Cleavage Spindle in Unio complanatus. This form is unlike Myzostoma in that it has male and female asters; but the centrosome of segmentation, like that of Myzostoma, arises from the female. E. B. Wilson, " Centrosome and Middle Piece in the Fertilization of the Egg." In Toxopneustes the centrosome arises not from the middle piece, but from a point between this and the head of the spermatozoan. H. E. Crampton, Jr., " Observations on the Fertilization in Gasteropods." Largely a confirmation of a paper by Mead. Miss Byrnes, " Maturation and Fertilization of Limax." C. S. Minot, "A New Microtome; New Laboratory Methods." Method of sharpening microtome knives—exhibited serial sections 2μ thick cut with the new microtome and with knives sharpened with adamantine by a laboratory boy. He advised filtering of all waste paraffine in the laboratory. W. Patten, " Preservation of Cartilage, etc., in a Dry Condition." By impregnetion with paraffine as if for section work. C. B. Davenport, "The Role of Water in Growth." Careful weighing of frog embryos shows that in early stages increase in weight is almost entirely due to absorption of water. J. P. McMurrich, " Structure and Function of the Hind Gut of Isopods." This region is lined with solid chitinous intima ; does not increase in number of cells ; does not absorb food. Dr. Conkin contradicted this, claiming that the intima is traversed by fine canaliculi, that food is absorbed by this region, and that its cells divide in the length of the animal by amitosis.

December 30, 1896.—H. C. Bumpus, " The Result of the Suspension of Natural Selection as Illustrated by the Introduced English Sparrow." Showed by comparison of 1600 eggs that this bird is more variable in the United States than in England. G. W. Field, " The Plankton of Brackish Water." A. E. Verrill, " Nocturnal Protective Colors of Amimals." On diurnal changes in colors of fishes as related to natural selection. Margaret Lewis, " Epidermal Sense-Organs in Certain Polychaetes." Structure and distribution of these in some maldanids. A. P. Henchman, " Eyes of Limax maximus." Details of structure and existence of primary and accessory visual organs. A. Schaper, " Earliest Differentiation of the Central Nervous System of Vertebrates." A history of the epithelial sustentation, glia and nerve cells in the spinal cord; and a parallel between ontogeny and the conditions found in amphroxus, lamprey, selachian, etc. W. Patten, "A Basis for a Theory of Color Perception." Based upon the wave lengths and the conical shape of the end-organs. N. P. Harrington, "A New Species of Entoconcha and the Systematic Position of the Genus." A. E. Verrill, "A Colossal Cephalopod from Florida." An octopus with body 18 feet long, 5 feet in diameter; estimated weight of this part, 5 tons. Part of one tentacle was found 34 feet long and 10 inches in diameter at the place where it was broken of. Its length in life is estimated between 70 and 90 feet. G. Lefevre, " Budding in Clavellinidæ." W. Patten, " Visual Centers of Vertebrates and Arthropods." An attempt to homologise these regions in the two groups. M. Bancroft, " Notes on Chelyosoma." J. S. Kingsley, "Amphiuma and the Caecilians." Claimed that these two forms are but remotely related to each other. F. C. Waite, " Brachial and Lumbo-Sacral Plexi in Necturus." The evidence presented by these structures upon vertebral intercalation and on the shifting of the pelvis.

The Society elected the following officers for the coming year: President, C. S. Minot; Vice-President, S. I. Smith; Secretary-Treasurer, G. H. Parker; Executive Committee, J. S. Kingsley, Bashford Dean. Many papers were left unread on account of lack of time. Probably, in the future, papers will be admitted only from actual members; they will be limited to fifteen minutes; and the authors will be requested to omit all historical reviews and details of observations, and to confine themselves to the broader conclusions and generalizations.

Boston Society of Natural History.—January 6, 1897.—The following papers were presented; Mr. A. W. Grabau, "The Sand Plains of Truro, Wellfleet and Eastham;" Prof. W. M. Davis, "A Geographical Classification of Coastal plains."—SAMUEL HENSHAW, *Secretary.*

January 20.—The following paper was read: Prof. W. O. Crosby, "The great fault and accompanying sandstone dikes of Ute Pass, Colorado."—SAMUEL HENSHAW, *Secretary.*

New York Academy of Science, Biological Section.—December 14, 1896, Prof. J. G. Curtis, Chairman, in the Chair. Dr. Arnold Graf made a preliminary report on "Some New Fixing Fluids;" Mr. J. A. McGregor read a paper entitled "An Embryo of *Cryptobranchus.*"

The embryo described is about 16 millimetres long, and is the first to be recorded of this species.

Prominent among its external features are the excessive amount of yolk, the marked ventral flexure in the cervical region, and the very early and almost simultaneous appearance of the two pairs of limbs. The dorsal surface is pigmented, the pigment cells being arranged in transverse bands, one band over each metamere of the body. Lateral line sense-organs can be distinguished. Among the most striking internal characters may be mentioned the dorso-ventral flattening of the notochord, the late appearance of entoderm and alimentary organs generally—due doubtless to the great mass of the yolk. The primordial skull is unusually well-developed. The auditory vesicle has an endolymphatic duct ending blindly immediately under the skin on the top of the head. Along the sides of the body a system of organs occur which are probably homologous with the embryonic sense-organs described by Beard in the sharks.

Dr. J. L. Wortman spoke of the "*Ganodonta,*" a new and primitive suborder of the Edentata from the Eocene of North America. One section or family of the suborder, viz., the Stylinodontidæ, is composed of *Hemigamus*, *Psittacotherium*, *Ectoganus* and *Stylinodon*, and forms a closely connected and consecutive phylum, reaching from the base of the Puerco to the Bridger formation, and leading directly to the Gravigrada or ground sloths. A second family, viz., the *Conoryctidæ*, composed of *Conoryctes* and *Onychodectes* may be regarded as ancestral to the Armadillos. The character and origin of the Edentate fauna of South America was discussed at length, and the conclusion reached that its original home was in North America. It was further held that there was a migration to the southward before the close of the Eocene, and that there must have then been an early land connection between the two continents.—C. L. BRISTOL, *Secretary.*

University of Pennsylvania Biological Club.—Monday, January 4th, Program. Demonstrations: "Descriptive Demonstration of the Life-History of Sacculina, H. Heath. Reviews: "Zoological," Drs. Moore and Calvert; "Chemical," Dr. Mary E. Pennington; "Pathological," Dr. Ferree Witmer; "Botanical," Dr. Macfarland, Mrs. Wilson. (Time limit for each review, five minutes.) Original Communication, by Dr. Edw. D. Cope, "The Embryonic Appendages and the Evolution of Mammalia."—H. C. PORTER, *Secretary.*

January 18.—Program Demonstration, Cell changes in Spirogyra grown under color-screens, Dr. Mary E. Pennington: Review.—Zoological: Dr. P. Calvert, Chemical; Dr. Mary E. Pennington, Botanical; Dr. J. Harshberger, Original Communications.—Account of the Boston meeting of the Society of American Naturalist and Affiliated Societies. Profs. Macfarlane, Conklin, Witmer, and Cope.—H. C. PORTER, *Secretary.*

The Biological Society of Washington.—January 2, 1897.—The following communications were made: "Brief Informal Notes and Exhibition of Specimens," (All the members are cordially invited to take part); E. W. Nelson, "New Birds from Mexico;" F. A. Lucas, "On the Natural Mortality Among Fur Seals;" C. Hart Merriam, "On the Pribilof Island Hair Seal;" W. H. Dall, "Notes on the Molluscan Fauna of the Pribilof Islands."—FREDERICK A. LUCAS, *Secretary.*

January 16.—The following communications were made: David White, "A New Lycopodineous Cone from the Coal Measures of Missouri;" David White, "Unity or Plurality of Type Specimens in Paleontology;" Edward L. Greene, "Development of the Idea of a Genus;" M. A. Carleton, "Ontogenetic Separation of *Puccinia graminis avenæ* from *P. graminis tritici.*"—FREDERIC A. LUCAS, *Secretary.*

Cincinnati Society of Natural History.—At the monthly meeting, January 5, 1897, the following communications were made : "On the Pulsation of the Molluscan Heart," by Frank C. Baker, of Chicago ; "Catalogue of the Odonata of Ohio—Part III," by D. L. Kellicott, of Columbus, O.; "An Odonate Nymph from a Thermal Spring," by the same author. (All three papers will be published in the "Journal" of the Society.—JOSUA LINDAHL.

The Academy of Science of St. Louis.—At the meeting of the Academy of Science of St. Louis, on the evening of December 21, 1896, Mr. H. von Schrenk made some remarks on the parasitism of lichens, illustrated especially by the long hanging forms of *Usnea barbata,* common on Juniperus, etc., on Long Island, N. Y. It was shown that these lichens do not penetrate below the outer periderm of the host, and consequently are not to be regarded as true parasites, but that they frequently cause the death of the latter by suffocation. As Schimper has noted for the long moss of the South, *Tillandsia usneoides,* the plant is capable of dissemination by wind and birds, and of growing in new stations without attachment. Officers for 1897 were nominated.

January 4, 1897, Dr. Amand Ravold gave a microscopic demonstration of Widal's test for typhoid fever, demonstrating that after the disease has existed for four days or more the blood of typhoid patients, probably because of some contained antitoxine, possesses the power of inhibiting the motion of typhoid bacilli from a pure culture introduced into it within a period of one hour or less, whereas in normal blood similar bacilli retain their power of locomotion for an indefinite length of time. It was stated that typhoid blood possessed this property even after having been dried for a period of four weeks or more, so that a few drops obtained from a person suspected of having the disease may be sent to suitable places for applying the test, thus rendering comparatively easy the early diagnosis of a disease, which, in its early stages, presents many clinical difficulties.

Professor F. E. Nipher gave preliminary results of partially completed experiments, made through the courtesy of the Burlington and Illinois Central Railroads, to determine the frictional effect of trains of cars on the air near them. His apparatus consists of a cup collector supported on a bar capable of sliding in guides on a clamp attached to the window-sill of the car. The bar is thrust out to varying distances up to 30 inches. The mouth of the collector is turned in the direction of motion of the train. The pressure due to the motion is conveyed through a rubber tube attached to the rear of the collector, and passing lengthwise through the car to a water monometer. The monometer has a tube with a rise of 4 or 5 in 400, and is provided with a pivotal mounting and a level.

The pressure near the train is comparatively small, and increases as the collector is thrust further out. It approaches a limit corresponding to the train velocity at the instant. Professor Nipher finds the relation between the limiting pressure and velocity to agree exactly with the formula $P=\frac{S}{2}v^2$, where v is the train velocity in centimeters per second, P is the pressure in dynes to the square centimeter, and S is the density of air in C. G. units at the temperature and pressure of the observations. He finds the pressure a maximum when the axis of the collector is parallel to the direction of motion with the mouth to the wind. Turning the collector until the axis makes an angle of about 80° with this position, the pressure reduces to zero. At greater angles the pressure becomes less than atmospheric pressure by an amount which reaches a maximum at the angle of 90°, and passes through a minimum at an angle of 80°, when the collector is in a trailing position. The sum of the coefficients for the two positions of maximum compression and minimum exhaust is almost exactly the same as Langley obtained with a pressure board when exposed normally to the wind.

The result shows that a large amount of air is dragged along with the train, the motion being communicated to air many feet away. This air is a source of danger to one standing too near the train when at full speed. One is likely to be toppled over, and the blow of the air communicates a motion of rotation, which may cause one to roll under the train if the nature of the ground does not prevent such a result. It was remarked, however, that where trains have a right to run at any speed, no prudent person would stand so near to a train as is necessary in order to be in danger from this source.

The following officers were declared elected for the year 1897 : President, M. L. Gray; First Vice-President, E. A. Englar; Second Vice-President, Charles R. Sanger ; Recording Secretary, William Trealease ; Corresponding Secretary, F. C. Runge; Treasurer, Enno Sander; Librarian, G. Hambach ; Curators, Julius Hurter, J. H. Kinealy, E. Evers ; Directors, M. H. Post, Joseph Grindon.

One person was elected to active membership.—WILLIAM TREALEASE, *Recording Secretary.*

Nebraska Academy of Sciences.—The Seventh Annual Meeting was held at Lincoln, December 29, 1896, with the following program :

Presidential Address by Prof. E. H. Barbour on "Academies of Sciences, their Economic and Educational Value," with suggestions for the improvement of our Academy; "A New Plankton Pump" for collecting aquatic organisms from any desired depth, H. B. Ward and Charles Fordyce; "Continued Biological Investigations," H. B. Ward; "Progress in the Study of the Fauna of the State" showing the richness of our fauna and how little it is known, Lawrence Brunner; "Some Methods of Collecting, Preserving and Mounting Fossils," Carrie A. Barbour; "Nomenclature of Nebraska Trees" with the history of particular names, Charles E. Bessey; "Reflections on the Genus *Ribes*" importance of recognizing the validity of species created by the gardener, F. W. Card; "Chalcedony-lime Nuts of the Genus *Hickora* from the Bad Lands of Nebraska," E. H. Barbour; "Comparison between Nebraska Diatomaceous Earth and that from Neighboring States," C. J. Elmore; "What is Mathematics" and how it correlates other sciences, E. W. Davis; "A Family of Quartic Surfaces," the sum of the distances of whose locus from two given surfaces is constant, Robert E. Moritz; "A Form of Weir Notch," giving a flow of water varying directly as the head, instead of following the usual more complicated law, O. V. P. Stout; "An Observation on Annual Rings in Tree Growth" when complete defoliation did not induce the growth of a second ring, F. W. Card; "Internal Temperature of Trees" rising as high as 119° at a depth of half an inch in a trunk exposed to sunshine, R. A. Emerson. The remaining papers, owing to the lateness of the hour were read by title only, as follows: "Notice of Two Important Books on Systematic Botany," Charles E. Bessey; "The Barites of Eastern Nebraska and the Bad Lands," Erwin H. Barbour; "Some Data as to Wind Distribution of Seeds," Ed. M. Hussong; "Parasites of Nebraska Dogs," Henry B. Ward; "Discovery of the First Meteorite in Nebraska," Erwin H. Barbour; "Notes on Phyllopod Crustacea," H. A. Lafler and A. S. Pearse.

The following officers were elected: President, Dr. A. S. Von Mansfelde; Vice-President, Dr. E. H. Barbour; Secretary and Treasurer, Prof. G. D. Swezey; Custodian, Prof. Lawrence Bruner; Directors, Dr. H. B. Ward, Prof. H. B. Duncanson, Mr. C. J. Elmore and Dr. H. Hapeman.

The next Annual Meeting will be held on the day following Thanksgiving. The volume of Proceedings for 1894–1895 has just been issued, price 40 cents.—G. D. Swezey, *Secretary.*

The Botanical Seminar of the University of Nebraska.—December 5, 1896.—The following papers were presented: Mycological Statistics of Nebraska, Mr. Roscoe Pound; The Comparative Anatomy of the Pistil in Apocarpous Families, Mr. Ernst Bessey: Phytogeographical Notes from Colorado, Mr. C. L. Shear. December 26th.—The Polyphylesis of the Lichens, Mr. F. E. Clements; The Phytogeography of Nebraska, Mr. Roscoe Pound: The Flora of Roberts County, South Dakota, Prof. D. A. Saunders; Washington and its Botanists, Mr. A. F. Woods.

Botanical Seminar of the City of Washington, D. C.—December 12, 1896.—The following papers were presented: Short Notices of Current Literature; Synopsis of the Genus Chætochloa, J. G. Smith; The Origin and Development of Sexuality and Alternation of Generations, Considered from the Modern Cytological Standpoint, W. T. Swingle; Some Cases of Polyembryony, A. J. Pieters; Manufacture of Cereal Foods, Mr. A. Carleton.

Torrey Botanical Club.—At the meeting of Tuesday evening, December 8, 1896, thirty persons were present and one new active and seven corresponding members were elected. The death of Mr. Wm. H. Rudkin, one of the oldest members of the club, was announced by Dr. Britton, and a committee was appointed to take suitable action. It was resolved that a complete list of the corresponding members should be printed in the December number of the *Bulletin*. A contribution by Dr. T. F. Allen, entitled "Descriptions of New Species of *Nitella* from North America and Japan," was read by title by Dr. Britton in the absence of the author. Mrs. Elizabeth G. Britton presented a "Contribution to the Bryology of Bolivia." It reviewed the more important collections of Bolivian mosses, the treatment which they had received and the present work in progress on this subject, and enumerated the bryological collections made by Dr. Rusby in Bolivia in the years 1885 and 1886. This collection contained 96 species, in 39 genera, 42 of the species being hitherto undescribed. Dr. H. H. Rusby spoke of "Botany at the Pan-American Medical Congress held in the City of Mexico, November, 1896." This paper contained brief references to the character of the flora observed on the journey to Mexico, an account of the scientific progress in the city, especially pertaining to applied botany and referred to the botanical work organized by the Pan-American Medical Congress. It was supplemented by remarks upon the same subject by Mrs. Britton, who also attended the Congress. A number of important publications by the *Instituto Medico Nacional* were exhibited. Dr. N. L. Britton described a new species of Geranium hitherto confounded with *G. Carolinianum*. The papers by Dr.

Allen and Dr. and Mrs. Britton will be published in the *Bulletin*, that by Dr. Rusby in the *Druggists' Circular*. On motion the Club adjourned to meet on the second Tuesday in January.

H. H. Rusby, *Rec. Secretary.*

Chicago Academy of Sciences.—A regular meeting of the Academy of Sciences was held Tuesday evening, December 22, 1896. Prof. Willis L. Moore was elected a corresponding member. Mr. Frank M. Woodruff, Ornithologist of the Academy, read a paper on "*Recent Occurrences of Rare Birds in Chicago.*"

The speaker remarked that he had been collecting data and specimens during the past year for the Ornithological Report of the Geological and Natural History Survey, and had been fortunate enough while engaged in this work to run across a number of rare species. The most favorable time for collecting these rarities is when Lake Michigan is almost frozen over, or during the months of January and February, after the wind has changed from an easterly direction and is blowing from the west. The east wind breaks up the ice and the west wind drives the broken floes away from the shore, leaving at times a long stretch of clear water, with here and there a small patch of ice; in this open water the ducks and gulls gather by thousands to feed upon dead fish and sewerage, and they may then be collected very readily. Many of the birds gathering here at this time are inhabitants of Alaska and Northern British America.

The rarest bird taken was a specimen of an immature male Kittiwake Gull (*Rissa tridactyla*) which was shot by Mr. Wagner on the 9th of December near Lincoln Park. This is the first record of a specimen of this bird being shot in Illinois. Barrows Golden-eye (*Glaucinetta islandica*) was seen recently in large flocks, and two specimens were shot, one of which got away, but the other was captured and is now in the Academy's collection. This species is rare, and there are but few records of its capture. The Old Squaw (*Claugula hiemalis*) is seen commonly about Chicago, but is seldom taken. Mr. Woodruff mentioned the following additional more or less rare species: White-winged Scoter (*Oidemia deglandi*); Velvet Scoter (*O. fusca*, at Meredosia); Robin Snipe or Knot (*Tringa canutus*); Buff-breasted Sandpiper (*Tryngites subruficollis*); Baird's Sandpiper (*Tringa bairdii*); Piping Plover (*Ægialitis meloda*); Black-bellied Plover (*Charadrius squatarola*); Stilt Sandpiper (*Micropalama himantopus*); Willet (*Symphemia semipalmata*); Turnstone (*Arenaria interpres*); Harlan's Hawk (*Buteo borealis harlani*) and American Goshawk (*Accipiter atricapillus*). The

Little Yellow Rail (*Porzana noveboracensis*) was mentioned, not as being rare, but as seldom collected, probably on account of its small size and skulking disposition.

The paper was illustrated by specimens of the species spoken of belonging to the Academy and Mr. Woodruff.

FRANK C. BAKER, *Secretary.*

SCIENTIFIC NEWS.

It will be of interest to Botanists and Zoologists to learn that a Biological Survey of Alabama has been organized and put into operation. The Survey will be carried on under the auspices of the Alabama Polytechnic Institute, and will be named by the specialists engaged at that institution in the various lines of biological investigation. It will have for its object the study in field and laboratory of all plants and animals occurring in the state and of the various conditions effecting them. The work will be done systematically and thoroughly and all results published. In a region so interesting and little worked as this portion of the Southern United States, careful and extended research will be sure to yield results of the greatest value. Large quantities of material in all groups of plants and animals (especially insects) will be collected and properly prepared. In connection with the Survey there has been founded an Exchange Bureau, from which will be distributed all duplicate material. Anyone desiring to correspond relative to specimens, literature, or work of Survey, should address *The Alabama Biological Survey, Auburn, Alabama.*

The New Monthly Open Court.—With January, 1897, the Chicago *Open Court* celebrates the decennial anniversary of its nativity and more consonantly with the solid character of its contents now appears in the form of a monthly instead of a weekly. Undoubtedly this change will gain more than ever the attention of thoughtful people for *The Open Court*, which is devoted to the high ideal of purifying religion by the methods employed in science,—an aim which it has always reverently but fearlessly pursued.

In the ten years of its existence *The Open Court* has gained the hearty co-operation of a majority of the world's most eminent scientists and thinkers, both orthodox and unorthodox. The subscription-price